

Listing and Amendments to the Claims

This listing of claims will replace all prior versions, and listings, of claims in the application:

1. (previously presented) Method for power level control in a display device having a plurality of display elements corresponding to the pixels of a picture, wherein a power level mode selection process is used for increasing the peak white enhancement factor of the display, in which the power value of a video picture is measured and a corresponding power level mode is selected for controlling the display contrast, wherein a picture is divided in a number of blocks, wherein in each block the video levels or values derived from the video levels of the colour components of the pixels are summed up in order to determine the local power values for the picture, wherein a local temperature estimation is performed for the corresponding blocks of the display based on said local power values and the previously estimated local temperature values according to the formula:

$$T(i,j)_t = T(i,j)_{t-1} + a \cdot P(i,j)_t - D$$

where $T(i,j)_t$ is the new estimated local temperature of a block, where $T(i,j)_{t-1}$ is the previous estimated local temperature of a block, where $a \cdot P(i,j)_t$ is the power being dissipated in the block and D is the power dissipation corresponding to the heat being given to the environment, wherein in the estimated local temperature values the maximum local temperature in the display is selected, wherein a further step of maximum power level limit determination is performed based on the maximum local temperature, and wherein the power level limit is used to restrict the range of selectable power level modes in the power level mode selection process to power level modes having a power level below or equal to said power level limit.

2. (previously presented) Method according to claim 1, wherein for local temperature estimation of a block, the power dissipation not only of the local block but also of a number of neighbouring blocks is taken into account.

3. (previously presented) Method according to claim 1, wherein the maximum local temperature determination for the display is performed once in a number of video frames.

4. (previously presented) Method according to claim 3, wherein the steps of local power value determination and local temperature estimation are performed only for one or more selected blocks of the whole picture within a frame period.

5. (previously presented) Method according to claim 3, wherein a picture is divided in 40 blocks and the maximum local temperature determination is performed once within 40 frames.

6. (previously presented) Method according to claim 1, wherein the switching between maximum allowed power level limits corresponding to the determined maximum local temperature is controlled with a power level mode against picture power curve that falls if the picture power is increasing and that rises if the picture power is decreasing, and with a delay between falling and rising, respectively rising and falling if the change direction of the picture power value changes.

7. (previously presented) Apparatus having included a power level determination and selection unit, and a local power determination unit, wherein for a picture that is divided in a number of blocks, per block the video levels or values derived from the video levels of the colour components of the pixels are summed up in order to determine the local power values for the picture, wherein, said apparatus further includes a local temperature estimator, that performs a local temperature estimation per block of the display based on said local power values and the previously estimated power values, according to the formula:

$$T(i,j)_t = T(i,j)_{t-1} + a \cdot P(i,j)_t - D$$

where $T(i,j)_t$ is the new estimated local temperature of a block, where $T(i,j)_{t-1}$ is the previous estimated local temperature of a block, where $a \cdot P(i,j)_t$ is the power being dissipated in the block and D is the power dissipation corresponding to the heat being given to the environment, said apparatus further includes a maximum local temperature selector that selects the maximum local temperature from the estimated local temperatures, a maximum power level limit selector that assigns a maximum power level limit to the selected maximum local temperature, and a power level limiter, wherein the power level limiter restricts the range of selectable power level modes in the power level mode selector to power level modes having a power level below or equal to said selected maximum power level limit.

8. (previously presented) Apparatus according to claim 7, wherein it is integrated in a plasma display device.

9. (New) A method for power level control in a display device having a plurality of display elements corresponding to the pixels of a picture, wherein a power level

mode selection process is used for increasing the peak white enhancement factor of the display, in which the power value of a video picture is measured and a corresponding power level mode is selected for controlling the display contrast, said picture being divided in a number of blocks, wherein in each block the video levels or values derived from the video levels of the colour components of the pixels are summed up in order to determine the local power values for the picture, said method comprising:

estimating a local temperature for the corresponding blocks of the display in dependence on said local power values and the previously estimated local temperature values,

selecting a maximum local temperature in the display from the estimated local temperature values,

determining a maximum power level limit based on the maximum local temperature, wherein the power level limit is used to restrict the range of selectable power level modes in the power level mode selection process to power level modes having a power level below or equal to said power level limit.

10. (New) The method according to claim 9, wherein for the step of estimating the local temperature of a block, the power dissipation not only of the local block but also of a number of neighbouring blocks is taken into account.

11. (New) The method according to claim 9, wherein the maximum local temperature determination for the display is performed once in a number of video frames.

12. (New) The method according to claim 11, wherein the steps of local power value determination and local temperature estimation are performed only for one or more selected blocks of the whole picture within a frame period.

13. (New) The method according to claim 11, wherein a picture is divided into 40 blocks and the maximum local temperature determination is performed once within 40 frames.

14. (New) The method according to claim 9, wherein the switching between maximum allowed power level limits corresponding to the determined maximum local temperature is controlled with a power level mode against picture power curve that falls if the picture power is increasing and that rises if the picture power is decreasing, and with a delay between falling and rising, respectively rising and falling if the change direction of the picture power value changes.

15. (New) An apparatus having included a power level determination and selection unit, and a local power determination unit, wherein for a picture that is divided in a number of blocks, per block the video levels or values derived from the video levels of the colour components of the pixels are summed up in order to determine the local power values for the picture, wherein, said apparatus further includes

a local temperature estimator, that performs a local temperature estimation per block of the display based on said local power values and the previously estimated power values,

a maximum local temperature selector that selects the maximum local temperature from the estimated local temperatures,

a maximum power level limit selector that assigns a maximum power level limit to the selected maximum local temperature, and

a power level limiter, wherein the power level limiter restricts the range of selectable power level modes in the power level mode selector to power level modes having a power level below or equal to said selected maximum power level limit.

16. (New) The apparatus according to claim 15, wherein said apparatus is integrated in a plasma display device.